

## CLAIMS

1. An electrochemical generator comprised of at least one elementary cell comprising porous current collectors/distributors in correspondence of the active area, a feed device for reactant gases and an extraction device for reaction products and exhausts, wherein the pressure drops localised in the extraction device are substantially higher than said pressure drops localised in the feed device.
2. The generator of claim 1, wherein the feed device comprises a feed manifold and at least one distributing channel and that the extraction device comprises a discharge manifold and at least one collecting channel.
3. The generator of claim 2 wherein said pressure drop localised in the feed device is concentrated within said at least one distributing channel and said pressure drop localised in the extraction device is concentrated within said at least one collecting channel.
4. The generator of the previous claims wherein the pressure inside the current collectors/distributors in correspondence of the active area is substantially equivalent to the pressure in the feed device.
5. The generator of claim 4 wherein the pressure in the feed device is lower than or equal to 1.5 bar abs.

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6. The generator of claims 2 to 5 wherein said at least one collecting channel has a substantially lower passage section than said at least one distributing channel.

7. The generator of claims 2 to 6 wherein said at least one collecting channel has a substantially higher length than said at least one distributing channel.

8. The generator of claims 2 to 7 comprising an amount of said collecting channels lower than the amount of said distributing channels.

9. The generator of the previous claims wherein said at least one elementary cell comprises sealing gaskets provided with centring holes symmetrical with respect to the vertical axis and asymmetrical with respect to the horizontal axis.

10. The generator of claims 2 to 9 wherein said at least one collecting channel is made hydrophobic.

11. The generator of claim 10 wherein said at least one collecting channel is made hydrophobic by applying suspensions of fluorinated polymers.

12. The generator of claim 11 wherein said fluorinated polymers are selected from the group consisting of polytetrafluoroethylene, polyvinylidenefluoride, tetrafluoroethylene-hexafluoroethylene copolymer, perfluoroalkoxy derivatives.

13. The generator of claims 2 to 12 wherein said distributing and collecting channels are obtained in the interior of sealing gaskets.

14. The generator of claims 2 to 12 wherein said distributing and collecting channels are obtained in the interior of bipolar plates delimiting the elementary cells.

15. An electrochemical generator comprised of at least one elementary cell comprising the distinctive features of the description and the drawings